

**WHAT IS CLAIMED IS:**

1                    1. A method of detecting the presence or absence of *Bacillus anthracis* in a  
 2 test sample, the method comprising:  
 3                    contacting a test sample with a capture reagent that can bind to a  
 4 *Bacillus anthracis* surface array protein, wherein the capture reagent forms a complex with  
 5 the surface array protein if the surface array protein is present in the test sample; and  
 6                    detecting whether surface array protein is bound to the capture reagent,  
 7 wherein the presence of surface array protein is indicative of the presence of *Bacillus*  
 8 *anthracis* in the test sample.

1                    2. The method of claim 1, wherein the surface array protein comprises a  
 2 polypeptide having an amino acid sequence of SEQ ID NO:1.

1                    3. The method of claim 1, wherein the *B. anthracis* strain is encapsulated.

1                    4. The method of claim 1, wherein the capture reagent comprises an  
 2 antibody which binds to surface array protein.

1                    5. The method of claim 4, wherein the antibody is a recombinant antibody.

1                    6. The method of claim 5, wherein the antibody is a recombinant  
 2 polyclonal antibody.

1                    7. The method of claim 5, wherein the antibody is a monoclonal antibody.

1                    8. The method of claim 1, wherein the test sample is collected from a site  
 2 of suspected or threatened anthrax contamination.

1                    9. The method of claim 8, wherein the test sample is collected using a  
 2 cyclonic collection device.

- 1                    10. The method of claim 1, wherein the test sample is not cultured prior to  
2     contacting with the capture reagent.
- 1                    11. The method of claim 1, wherein the capture reagent is immobilized on a  
2     solid support.
- 1                    12. The method of claim 11, wherein the solid support is a microtiter dish.
- 1                    13. The method of claim 11, wherein the capture reagent is immobilized on  
2     the solid support prior to contacting the capture reagent with the test sample.
- 1                    14. The method of claim 1, wherein the method can detect *B. anthracis* at  
2     concentrations as low as about 10,000 cfu/ml.
- 1                    15. The method of claim 14, wherein the method can detect *B. anthracis* at  
2     concentrations as low as about 5,000 cfu/ml.
- 1                    16. The method of claim 15, wherein the method can detect *B. anthracis* at  
2     concentrations as low as about 1,800 cfu/ml.
- 1                    17. The method of claim 1, wherein the detection of the surface array  
2     protein is performed by contacting the surface array protein with a detection reagent that can  
3     bind to the surface array protein.
- 1                    18. The method of claim 17, wherein the detection reagent comprises an  
2     antibody which binds to surface array protein.
- 1                    19. The method of claim 17, wherein the detection reagent binds to a  
2     different epitope of the surface array protein than does the capture reagent.
- 1                    20. The method of claim 17, wherein the detection reagent comprises a  
2     detectable label.

1                   21. The method of claim 20, wherein the detectable label is selected from  
2 the group consisting of a radioactive label, a fluorophore, a dye, an enzyme, and a  
3 chemiluminescent label.

1                   22. A kit for detecting the presence or absence of *Bacillus anthracis* in a  
2 sample, the kit comprising:  
3                   a solid support upon which is immobilized a capture reagent that can  
4 bind to a surface array protein of *Bacillus anthracis*; and  
5                   a detection reagent which binds to the surface array protein.

1                   23. The kit of claim 22, wherein the solid support is a microtiter dish.

1                   24. The kit of claim 22, wherein the capture reagent is an antibody.

1                   25. The kit of claim 24, wherein the antibody is a recombinant polyclonal  
2 antibody.

1                   26. The kit of claim 24, wherein the antibody is a monoclonal antibody.

1                   27. The kit of claim 22, wherein the capture reagent is a mixture of  
2 monoclonal and polyclonal antibody preparations.

1                   28. The kit of claim 22, wherein the kit further comprises written  
2 instructions for using the kit to determine whether a test sample contains *B. anthracis*.

1                   29. The kit according to claim 22, wherein the kit further comprises a  
2 positive control that comprises a polypeptide that comprises an antigenic determinant of a *B.*  
3 *anthracis* surface array protein.

1                   30. The kit according to claim 29, wherein the surface array protein  
2 comprises an amino acid sequence of SEQ ID NO:1.

- 1                    31. A recombinant polyclonal antibody preparation that specifically binds to  
2    an antigenic determinant of a surface array protein of *Bacillus anthracis*.
- 1                    32. The recombinant polyclonal antibody preparation of claim 31, wherein  
2    the surface array protein comprises an amino acid sequence of SEQ ID NO:1.